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ABSTRACT

Retirement policies and possible effects on teacher shortages were examined. Information was obtained concerning: a 5-year summary of faculty retirements by age, the age distribution of each institution's full-time faculty by academic area, and changes over the past 5 years in personnel policies and procedures in response to anticipated faculty shortages or as part of an ongoing management system. A total of 12 to 20 institutions provided data on faculty retirement ages and age distributions and fields of full-time faculty. These data were used to make projections of faculty retirements for 1987 through 1994 and 1994 through the year 2000. Twenty-four institutions provided information on recently initiated changes in personnel policies. Three modal years of retirement were found: ages 65, 66, and 70. Across the 5-year period, about two-thirds of the faculty had retired by age 66. The data suggest that factors other than the age of mandatory retirement seem to be more instrumental in determining the average age of retirement. There were substantially younger faculty in several of the growth fields of the 1970s and 1980s, including business, computer science and information science, allied health and health sciences, law, and communications. Nineteen references are cited. (SW)

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# Is Higher Education Confronting Faculty Shortages?

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This paper was presented at the annual meeting of the Association for the Study of Higher Education held at the Sheraton Inner Harbor Hotel in Baltimore, Maryland, November 21-24, 1987. This paper was reviewed by ASHE and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC collection of ASHE conference papers.

# Is Higher Fducation Confronting Faculty Shortages?

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What will happen when tenured faculty are allowed to continue working beyond age 70? Beginning on January 1, 1994, by virtue of amendments to the Age Discrimination in Employment Act, colleges and universities will no longer be permitted to mandate the retirement of tenured faculty. Discussion of this issue most typically focuses on the need to find alternative incentives to encourage faculty to retire and to promote infusion of new faculty into the profession. The fear is often expressed that higher education will be saddled with an aging, and implicitly less effective, faculty.

While not underestimating the potential significance of such a prospect, it can be shortsighted to anticipate change without examining other pertinent factors. In the words of James Thurber, "It is better to know some of the questions than all of the answers." The authors suspect that the answers on how to achieve "new blood" in the faculty ranks without mandatory retirement are in essence answers to, if not the wrong questions, at least another question. It is proposed that the issue is not necessarily one of dealing with a greying faculty hanging on into their dotage, but one of replacing today's faculty with an equally qualified, committed and vital professoriate in the coming decade.

## National Academic Personnel Issues and Trends

There are a number of factors that must be considered when assessing the likely patterns of faculty behavior during the period that extends to the end of the current century. Among these are a number that have been well articulated by Bowen and Schuster (1986). Designating the American professoriate as "a national resource imperiled," Bowen and Schuster point out that faculty salary levels are perceived by a significant proportion of faculty as inadequate or non-competitive with salaries in business and industry. In what is basically a post-1950s phenomenon, a growing proportion of doctoral recipients are being attracted to employment outside of academe; over 40 percent of holders of doctorates today are working in business, industry, and government. With career alternatives, many of the brightest doctoral graduates are lost to higher education, and each year significant numbers of current faculty leave academe. Over time these developments may become more severe, with the college freshmen of today expressing more interest in careers in professional and technical fields, and a shrinking interest in college teaching and scientific research. There are even questions about the quality of academic talent pursuing the Ph.D. in recent years, as a result of the "brain drain" to professional fields (Hartnett 1985).

Trends in the production of Ph.D. holders will also have significant bearing upon the availability of prospective college and university faculty. Tripling during the 1960s and reaching a peak in 1973, the number of doctorate degrees awarded in all fields declined slightly during the 1970s before leveling off at about 31,000 in 1978 (Office of Technology Assessment 1985). That figure has remained relatively constant through the 1980s. However, the numbers of white American males earning doctorates have declined substantially. This decline has been offset by modest increases in minorities and females earning the doctorate, and significant increases in foreign nationals earning the Ph.D. Also, these shifts have not occurred evenly across disciplines. Women and minorities continue to focus on the humanities, social sciences, and education, and foreign nationals continue to cluster in engineering, the sciences, and technical fields.

Important considerations are also developing in the area of faculty retirement. Of particular significance is the offering of incentive early retirement programs. As summarized by Chronister and Kepple (1987), national studies reveal that anywhere from 21 percent to 55 percent of the reporting institutions currently provide formal programs encouraging faculty retirements prior to a normally expected age of retirement. A higher proportion of public universities seems to offer such programs, while private liberal arts colleges are resorting to retirement incentives in smaller proportions (Chronister and Trainer 1985; Kepple 1984; and Mortimer, Bagshaw, and Masland 1985). Yet, even as such programs seem to be gaining in popularity, changes in the federal tax code are imposing restrictions on some of the incentives offered (Mangan 1987). For example, "buy-out" programs that deposited a lump-sum payment into a tax-deferred account can no longer receive tax-deferred status under the revised federal tax structure.

Whether because of changes in mandatory retirement policy, in the appeal of an academic career, in the production of Ph.D. holders, in institutional retirement programs, or similar significant trends, higher education will be forced more and more to pay attention to the issue of academic staffing through the turn of the century. The authors posed a number of questions to help better address these concerns. For example, what are the current mandatory retirement ages in a chosen sample of institutions? What was the impact of the 1982 change in mandatory retirement from 65 to 70 (Age Discrimination in Employment Act Amendments of 1978)? What does this experience suggest regarding the possible impact of the elimination of mandatory retirement? Do prospective retirement rates vary by discipline, and, if so, how do these variable rates relate to current student demand? And finally, what are the existing institutional perceptions about prospective faculty retirements in the absence of mandatory retirement? Are institutions initiating changes in personnel policies, faculty monitoring activities, or resource initiatives?

## Method

The authors chose to utilize the participation of their home institution in an interinstitutional data exchange of 32 members of the Association of American Universities as an effective means of data collection. This set of institutions was deemed an appropriate group to study because, as suggested by Burke (1987), the research university "is the training ground for new faculty members as well as a principal employer. As such, it establishes the norms for the profession" (p. 200). The authors also suggest that this dual role doubles the stakes of the universities in faculty turnover.

In February 1986 the data exchange representatives of these universities were sent a questionnaire requesting that they provide data on their institutions' retirement policies; a five-year summary of faculty retirements by age (in retrospect, this question should have requested the information by discipline as well); and the age distribution of their full-time faculty by academic area. This questionnaire was followed with a second survey in April 1987 to the chief academic officers of these same institutions requesting that they indicate what changes had been initiated over the previous five years in a variety of personnel policies and procedures (a) as part of their on-going personnel management and (b) in direct response to anticipated faculty shortages. The latter inquiry was based on the authors' speculation that, contrary to concerns that programs need to be initiated to promote faculty turnover, colleges and universities will be increasingly faced with replenishing departing faculties.

Because of the difficulty in generating data for several of the more complex data-oriented survey questions, usable response rates on the first survey varied by item. Twelve to twenty institutions provided data on various aspects of the survey, as summarized in Tables 1 through 4. In order to provide comparable data by discipline, respondents organized institutional data according to the standard definitions established in the federal Classification of Instructional Programs. The data on faculty retirements and faculty age distribution were used to estimate projections of faculty retirements for the periods 1987 through 1994 and 1994 through the year 2000. Twenty-four institutions responded to the second survey regarding recently initiated changes in personnel policies and practices.

## Results

A recent report by the AAUP Committee A on Academic Freedom and Tenure (1987) "notes with regret that...there is very little useful material available on current retirement decisions in higher education" (p. 47). Noting that five years have passed since the change in the mandatory age of retirement from 65 to 70, the report inquires, "What has happened? How many faculty members have postponed retirement beyond the age when their institutions previously required it?"

To help anticipate possible changes in faculty retirement patterns which might follow the elimination of mandatory retirement in 1994, the authors examined the impact of an earlier legislative change -- the amendment in federal policy which raised the permissible mandatory retirement age from 65 to 70 in 1982. As indicated in Table 1, 12 of the 20 reporting institutions had already changed their mandatory retirement age to 70 prior to 1982, two had a mandatory age of 68, five had retained the age of 65, and one had already eliminated mandatory retirement. By 1987, 18 had adopted a mandatory age of 70 as allowed by law, and two had dropped mandatory retirement. The early shift to age 70 mandatory retirement is consistent with the findings cited in the 1982 Annual Report of the TIAA-CREF that the vast majority of institutions (about 85 percent) did not take advantage of the four-year exemption provided to higher education for adopting the 70 mandatory age (Calvin 1984).

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INSERT TABLE 1 HERE

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Table 2 provides information on the average age at retirement for 12 of the responding institutions for the years 1982 through 1986. Institutions which mandated retirement at age 65 in 1981-82 are so designated in the table. As can be seen, the average age of retirement bears no obvious correlation to mandatory retirement age. Of more apparent significance is the stability over the five-year period in the average age by institution and for the aggregate faculty pool of retirees; for nine of the universities and for the overall average over the five-year period, the standard deviation is less than 1.0.

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INSERT TABLE 2 HERE

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Table 3 provides a five-year summary of the number of retirements by age. As seen in this table, there are three modal years of retirement: ages 65, 66, and 70. More significantly, across the five-year period reported, approximately two-thirds of the faculty have retired by the age of 66.

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INSERT TABLE 3 HERE

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The data in these tables suggest that factors other than the age of mandatory retirement seem to be far more instrumental in determining the average age of retirement. Such factors might include the benefits of a particular institutional retirement program, or, as suggested by the recent AAUP Committee A report (1987), "a revival of high levels of inflation, or of expectations of high levels of inflation" (p. 47). It is probable that such factors will continue to be important contributing variables in faculty decisions regarding the appropriate time to retire, irrespective of the elimination of mandatory retirement. That considerations other than age of mandatory retirement need to be assessed

is consistent with the findings of Bottomley, Linnell, and Marsh (1980), who concluded that such variables as rank distribution have a greater impact upon anticipated faculty retirements than changes in the mandatory retirement age.

In their work on the American professoriate, Bowen and Schuster (1986) argue that in projecting new faculty appointments through the turn of the century, it is not necessary to break down the totals into such factors as geographic regions, types of institutions, or academic disciplines. Bowen and Schuster are more concerned with broader issues of long-run mobility and the normal process of faculty turnover, including the flow of faculty to and from careers outside academe. They point out, however, that in any case the necessary data on turnover by discipline are not readily available (p. 195).

Faculty projections are influenced, of course, by a variety of factors and conditions, including the state of the national economy, technological change, assumptions about enrollment levels, enrollment mix, the use of part-time vs. full-time faculty, and pre-retirement faculty attrition. Nevertheless, the authors believe that changing interest in and demand for different disciplines over the past three decades have greatly affected the age distribution of faculty by discipline. Such differences will have dramatic impact on prospective retirement rates and the demand for replacement faculty in particular fields.

Information on the distribution of faculty in the 14-institution data base of 22,000 faculty indicates that there is a substantially younger faculty in several of the growth fields of the 1970s and 1980s (Table 4). These include business, with 74 percent of the faculty under age 50; computer science and information sciences with 82 percent; allied health and health sciences with 69 percent; law with 66 percent; and communications with 65 percent under age 50. Somewhat surprisingly, 71 percent of the home economics faculty are also under age 50.

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INSERT TABLE 4 HERE

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Among the older faculties are those in disciplines containing especially large portions of the professoriate, including the languages, area studies, humanities and letters; math, life sciences, physical sciences, and science technology; and engineering and engineering technology. Twenty-seven percent of the faculty members in all three of these broad disciplinary areas are between the ages of 50 and 59. This is a particularly important cohort since faculty in this cluster will be between the age of 57 and 66 in 1994 and between 63 and 72 by the year 2000. Assuming that patterns of faculty retirement will not change dramatically, the size of the age 50 to 59 cohort will lead to significant faculty turnover in these fields. These numbers comprise many of those faculty hired into academe during the strong growth period of the '50s and '60s. The need to replace large numbers of arts and science faculty beginning in the mid-1990s will be especially acute, since it coincides with projected increases in the number of high school

graduates and corresponding increases in college enrollments (McConnell and Kaufman 1984). In addition, the replacement of significant numbers of engineering faculty is compounded by current shortages in Ph.D. trained scholars. There are already many faculty positions in engineering presently available but unfilled (Cordes 1987).

Because several of the larger faculty disciplinary cohorts are also the older faculty, there could be a profound impact on retirement and faculty replacement rates. Utilizing the data on faculty retirement rates by age and the distribution of current faculty by age, it is possible to make some general estimates of projected retirements. From this population of 22,000 university faculty, approximately 20 percent will retire between 1987 and 1994; another 30 percent will retire between 1994 and 2000. In other words, during the second half of the period between now and the year 2000, the rate of retirements will increase one and a half times. The impact of this rate change is greater when considered in terms of actual numbers. For these 14 universities alone, there will be approximately 4350 retirements between 1987 and 1994, and over 6500 retirements between 1994 and 2000.

If one accepts the argument that many of these major universities are unlikely to realize any downturn in enrollment due to demographic declines, then virtually all of these retirements represent positions that will need to be filled. Similarly, unless Ph.D. production or the proportion of Ph.D. graduates pursuing careers in academe can be increased, the prospect of readily replacing these faculty becomes a formidable task. This proposition is supported by Wessell (Higher Education and National Affairs 1987), dean of humanities and sciences at Stanford University, who reports that there soon will be a substantial thinning of the ranks of those faculty who began their careers in the 1950s and 1960s. "The result...is going to mean real difficulty in the coming decades for many universities and colleges to hire enough high-quality faculty to maintain the standards we now enjoy" (p. 4).

The results of the second survey, to chief academic officers, are reported in Table 5. In the broadest terms, the institutions participating in this study are not particularly concerned about prospective faculty shortages in the near future. Two of the respondents stated quite unequivocally that the idea of faculty shortages is a non-issue, since there is no "large bulge in the group nearing retirement." Other respondents commented that their emphasis has been on hiring, but one vice chancellor for academic affairs wrote: "I can't seem to get the attention of the powers that there is an impending critical shortage of new faculty." Commented another: "We currently have a university-wide Future Directions committee which is studying this problem among others."

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INSERT TABLE 5 HERE

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The results do provide evidence of more general institutional response to academic staffing issues. Two-thirds of the institutions have initiated new activity in the last five years in non-modeling (informal) analytical efforts to monitor projected faculty retirements, with half of them reporting that this activity is related to concerns about anticipated faculty shortages. Whether the remaining third of the respondents had been monitoring faculty retirements all along or had, in fact, not increased their monitoring activities cannot be ascertained from the data.

About a third of the universities have instituted a variety of faculty development programs over the past five years. Most prevalent among these are revisions to the institution's sabbatical program, redesigned faculty evaluation programs, implementation of faculty renewal grants, and career development workshops. The most frequent changes identified in personnel policies over the past five years have been the initiation of phased retirement programs, incentive early retirement programs, and retirement counseling programs. Finally, 19 of the universities have provided additional resources for supporting women, blacks, and other special graduate student groups, and 10 have instituted policies permitting advance hiring of new faculty on the basis of anticipated retirements a year or two later. Only five of the 24 universities have implemented efforts in the last five years to change the workload mix for senior faculty.

## Discussion and Recommendations

Mortimer, Bagshaw, and Masland (1985) suggest that "In a complex, nonprofit, goal-ambiguous, professionally oriented, labor-intensive organization, people are the most precious asset" (p. 85). As the title of their monograph implies, "flexibility" in the management of academic personnel policies and procedures must be maintained in order to guide colleges and universities through a period of almost certain uncertainty.

Similarly, Clark, Corcoran, and Lewis (1986) conclude that "the maintenance and enhancement of faculty vitality will be more cost-effective than subsequent remediation" (p. 192). Their support for increased efforts to provide faculty development programs targeted to the particular "contextual, situational variables" that are controlling at a given college or university is, in many ways, in contradistinction to the more visible and extensive efforts to devise incentive early retirement programs.

The data developed for this report are not conclusive enough to affirm or deny the prospect of significant faculty shortages developing during the latter part of the '90s. No one should assume a doomsday mentality similar to the one embraced by some 1970s' prognosticators of student enrollments. Yet, the information is strong enough to suggest that many colleges and universities should anticipate a greater rate of faculty retirements as the 1990s progress, and that there may be considerable difficulty in replacing faculty in some disciplines with an adequate number of Ph.D.-trained graduates. Institutions should be considering a variety of measures in response.

Recruit prospective faculty from mid-career doldrums in business, government, and industry. Approximately 40 percent of the holders of doctoral degrees currently are employed outside of academe. In some disciplines, special opportunities may exist for recruiting faculty from among individuals looking for mid-career changes. In addition to expanding the pool of potential faculty candidates, employing other than newly-minted doctorate graduates also affords an opportunity for leveling the age distribution more evenly across the faculty spectrum.

Alter the perceived notion of the appropriate "age" of retirement. What is normal retirement? Chronister and Kepple (1987) define "normal" retirement as a term "used in retirement planning to designate an age for setting retirement income objectives and contribution rates" (p. 16). It may or may not coincide with the "mandatory" retirement age of 70. For many years, age 65 has been perceived as a normal year for retirement, both because of its designation as the year in which employers could mandate retirement and because it is the year at which an individual can receive full Social Security benefits. At what age is it realistic to consider a faculty member eligible for taking advantage of an incentive early retirement program?

At some institutions, in selected disciplines, it may be necessary to encourage faculty members to continue beyond normal retirement age in order to respond to instructional demand. Accordingly, institutions may want to focus attention more on policies that encourage faculty not to opt for full retirement, rather than programs that promote retirement. Most notable of these may be phased retirement and partial retirement programs. Opportunities for professional travel and other incentives may also encourage faculty to remain longer on the instructional staff. This may be especially true for such disciplines as the arts, social sciences, humanities, and sciences.

Monitor faculty flow more deliberately. Many institutions need to monitor more extensively the academic staffing patterns of their faculties, including age distribution by rank and discipline, the salaries attributable to each position, and the pattern of retirements by age and discipline. This is not a recommendation for all institutions to develop complex computer flow models, nor does it reject sophisticated techniques. However, an increased awareness of faculty flow can guide the development and modification of academic personnel policies and procedures.

Hire new faculty when available on "mortgaged" positions. Assuming adequate knowledge of anticipated retirements, selective hiring in some disciplines should be encouraged on the basis of future retirements. In those disciplines in which shortages are expected, deans and department heads might be provided with temporary funds to hire new faculty as many as two or three years before the expected retirement. This is an especially appealing procedure to recruit a prospective faculty member who may not be on the market a year or two hence.

Develop improved faculty development programs. Faculty development is not offered as a panacea. Nevertheless, all too often it is heard that a faculty development program tried here or there wasn't all that effective, or that no one knew really how to evaluate it. It is probably fair to speculate that most institutions have not given sufficient attention to faculty development and the means to enhance it. As a resource on which a significant percentage of most budgets are expended, faculty should not be allowed to atrophy.

One problem with existing faculty development programs may be a matter of misdirection. Clark, Corcoran, and Lewis (1986) note that the faculty vitality problem often is recognized as a concern for declining research and scholarly productivity, and less so as a concern for the quality of teaching. This is especially true at the research university. On the other hand, they note,

> most institutional development programs...continually tend to target their efforts on teaching, and most administrators continue to hold the belief, often reinforced by student clamor for better teaching, that if faculty malaise is apparent, the appropriate response is a more and better instructional development effort with increased opportunity for voluntary faculty participation. The basic nature of the problem is often misdiagnosed and mistreated (p. 190).

This analysis lends support to the recommendation to provide faculty incentives for professional and scholarly participation and development. It also suggests that many of the senior faculty considering retirement are among the finest instructors and, in fact, get considerable reward from their instructional activities. Opportunities to continue their teaching may be considered quite favorably.

Devise effective means to recruit prospective faculty to academe. In a number of disciplines, there is an existing or emerging concern about the pool of graduate students who will supply our colleges and universities with their future faculties. In some cases the concern regards insufficient raw numbers of graduates interested in the field. In others, the issue is one of mix, involving concerns about the distribution of graduates by gender, race, or national origin. In addition to the need to encourage more undergraduates to pursue post-baccalaureate education, increased efforts may be needed in some disciplines to recruit Ph.D.-trained professionals from government, business, and industry to return to the academic setting. Accommodations in appointment, promotion, and tenure policies and procedures may need to be provided in order to attract these individuals away from often lucrative careers in other sectors.

Finally, graduate-research universities need to examine graduate assistant stipends. Although increased levels of remuneration have significant implications on both general and restricted budgets, in disciplines such as engineering more attractive stipends may be necessary to entice baccalaureate and master's degree holders to pursue the

doctorate and a professional career in the university. However, this is an issue that probably requires national leadership to accomplish, as no single institution can effectively change the overall structure and reward system of graduate education.

Table 1
Survey Responses[1] on Mandatory Retirement Policies
Spring 1987

(N=20 Universities)

| | Prior to 1982 | March 1987 |
|---|---|---|
| No mandated retirement age | 1 | 2 |
| Mandate retirement at age 65 | 5 | |
| Mandate retirement at age 68 | 2 | |
| Mandate retirement at age 70 | 12 | 18 |
| Total | 20 | 20 |

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[1] Survey Respondents:

* Carnegie Mellon
* Florida
* Illinois - Urbana
* Indiana - Bloomington
  Iowa State
* Kansas
  Michigan State
  Minnesota
* Missouri - Columbia
* North Carolina - Chapel Hill
* Northwestern
* Ohio State - Columbus
  Oregon
* Penn State - University Park
  Pittsburgh
* Purdue
* Texas - Austin
* Virginia
* Washington
  Wisconsin - Madison

* indicates that data for these universities are included in distribution of faculty by age and academic area (Table 4).

Table 2
Average Age at Retirement
for Tenured & Tenure-Track Faculty

(N=12 Universities)

| University | 1981-82 | 1982-83 | 1983-84 | 1984-85 | 1985-86 | Avge | Std Dev |
|---|---|---|---|---|---|---|---|
| * A | 62.4 | 62.2 | 62.0 | 62.0 | 61.4 | 62.0 | 0.3 |
| B | 60.0 | 62.0 | 64.0 | 63.0 | 61.0 | 62.0 | 1.4 |
| C | 66.3 | 64.4 | 64.1 | 64.0 | 58.5 | 63.5 | 2.6 |
| D | 64.2 | 64.3 | 63.9 | 64.5 | 65.1 | 64.4 | 0.4 |
| * E | 64.0 | 64.0 | 66.0 | 65.0 | 64.0 | 64.6 | 0.8 |
| * F | 66.0 | 61.0 | 65.0 | 65.0 | 68.0 | 65.0 | 2.3 |
| G | 66.2 | 65.0 | 65.4 | 64.4 | 65.8 | 65.4 | 0.6 |
| H | 67.0 | 66.0 | 67.0 | 66.0 | 66.0 | 66.4 | 0.5 |
| I | 67.0 | 66.3 | 67.0 | 66.6 | 65.7 | 66.5 | 0.5 |
| J | 67.0 | 67.0 | 66.0 | 67.0 | 68.0 | 67.0 | 0.6 |
| K | 67.0 | 66.0 | 68.0 | 68.0 | 67.0 | 67.2 | 0.7 |
| * L[1] | 69.0 | 67.0 | 67.0 | 68.0 | 67.0 | 67.6 | 0.8 |
| Average | 65.5 | 64.6 | 65.5 | 65.3 | 64.8 | 65.1 | 0.4 |
| Standard Dev | 2.4 | 1.9 | 1.7 | 1.8 | 2.9 | 1.8 | |

* indicates institutions which still mandated retirement at age 65 in 1981-82.

[1] Institution L established a mandatory retirement age of 65 in 1977. Faculty appointed before 1977 were allowed to continue to work until age 70 under a grandfather clause.

Table 3
Number of Faculty Retirements by Age
Five Year Summary

(N=12 Universities)

| Age | 1981-82 | | 1982-83 | | 1983-84 | | 1984-85 | | 1985-86 | |
|---|---|---|---|---|---|---|---|---|---|---|
| below 55 | 3 | 1.6% | 3 | 1.3% | 5 | 1.7% | 10 | 3.3% | 8 | 2.0% |
| 55-59 | 13 | 6.8% | 17 | 7.2% | 20 | 6.7% | 25 | 8.3% | 33 | 8.1% |
| 60 | 3 | 1.6% | 9 | 3.8% | 8 | 2.7% | 7 | 2.3% | 15 | 3.7% |
| 61 | 3 | 1.6% | 14 | 5.9% | 12 | 4.0% | 13 | 4.3% | 18 | 4.4% |
| 62 | 11 | 5.8% | 15 | 6.4% | 17 | 5.7% | 21 | 7.0% | 22 | 5.4% |
| 63 | 12 | 6.3% | 20 | 8.5% | 20 | 6.7% | 26 | 8.7% | 24 | 5.9% |
| 64 | 7 | 3.7% | 20 | 8.5% | 22 | 7.3% | 22 | 7.3% | 26 | 6.4% |
| 65 | 42 | 22.1% | 34 | 14.4% | 58 | 19.3% | 51 | 17.0% | 85 | 20.9% |
| 66 | 24 | 12.6% | 24 | 10.2% | 29 | 9.7% | 31 | 10.3% | 45 | 11.1% |
| 67 | 11 | 5.8% | 15 | 6.4% | 24 | 8.0% | 23 | 7.7% | 34 | 8.4% |
| 68 | 10 | 5.3% | 10 | 4.2% | 11 | 3.7% | 13 | 4.3% | 24 | 5.9% |
| 69 | 16 | 8.4% | 12 | 5.1% | 12 | 4.0% | 17 | 5.7% | 20 | 4.9% |
| 70 | 32 | 16.8% | 40 | 16.9% | 54 | 18.0% | 34 | 11.3% | 45 | 11.1% |
| 71 & over | 3 | 1.6% | 3 | 1.3% | 8 | 2.7% | 7 | 2.3% | 7 | 1.7% |
| Total | 190 | 100.0% | 236 | 100.0% | 300 | 100.0% | 300 | 100.0% | 406 | 100.0% |

Summary Data:

| | | | | | |
|---|---|---|---|---|---|
| Retirees at 65 or under | 49% | 56% | 54% | 58% | 57% |
| Retirees at 66 or under | 62% | 66% | 64% | 69% | 68% |

Table 4
Distribution of Faculty by Age and Academic Area
Fall 1986
(N=14 Universities)

With % Age Cohort in Each Academic Grouping
(e.g., 60% of faculty in the academic area of agriculture are under 50)

| Academic Grouping | Under 50 | | 50-54 | | 55-59 | | 60-61 | | 62-64 | | 65-70 | | 71+ | | All Ages | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % | # | % | # | % | # | % |
| Agriculture | 870 | 60% | 183 | 13% | 182 | 13% | 55 | 4% | 78 | 5% | 72 | 5% | 1 | 0% | 1,441 | 100% |
| Architecture & Environmental Design | 211 | 59% | 42 | 12% | 42 | 12% | 18 | 5% | 23 | 6% | 19 | 5% | 1 | 0% | 356 | 100% |
| Languages, Area Studies, Humanities & Letters | 1,304 | 60% | 304 | 14% | 277 | 13% | 86 | 4% | 104 | 5% | 86 | 4% | 13 | 1% | 2,174 | 100% |
| Business | 838 | 74% | 100 | 9% | 89 | 8% | 32 | 3% | 40 | 4% | 27 | 2% | 3 | 0% | 1,129 | 100% |
| Communications | 273 | 65% | 44 | 10% | 50 | 12% | 12 | 3% | 19 | 5% | 21 | 5% | 2 | 0% | 421 | 100% |
| Computer & Information Sciences | 230 | 82% | 23 | 8% | 16 | 6% | 5 | 2% | 5 | 2% | 2 | 1% | | 0% | 281 | 100% |
| Education | 728 | 54% | 218 | 16% | 208 | 15% | 72 | 5% | 67 | 5% | 46 | 3% | 3 | 0% | 1,342 | 100% |
| Engineering & Engineering Technology | 1,377 | 59% | 342 | 15% | 270 | 12% | 87 | 4% | 142 | 6% | 96 | 4% | 7 | 0% | 2,320 | 100% |
| Allied Health & Health Sciences | 2,154 | 69% | 387 | 12% | 303 | 10% | 103 | 3% | 102 | 3% | 67 | 2% | 3 | 0% | 3,119 | 100% |
| Home Economics | 220 | 71% | 27 | 9% | 26 | 8% | 10 | 3% | 12 | 4% | 15 | 5% | 1 | 0% | 311 | 100% |
| Law | 279 | 66% | 57 | 13% | 37 | 9% | 7 | 2% | 10 | 2% | 30 | 7% | 3 | 1% | 423 | 100% |
| Library Science | 61 | 53% | 12 | 10% | 24 | 21% | 9 | 8% | 8 | 7% | 2 | 2% | | 0% | 116 | 100% |
| Math, Life Sciences, Physical Sciences, & Science Technology | 2,047 | 59% | 530 | 15% | 415 | 12% | 131 | 4% | 171 | 5% | 153 | 4% | 10 | 0% | 3,457 | 100% |
| Recreation | 52 | 60% | 11 | 13% | 15 | 17% | 2 | 2% | 4 | 5% | 2 | 2% | | 0% | 86 | 100% |
| Social Sciences & Psychology | 1,640 | 63% | 328 | 13% | 270 | 10% | 99 | 4% | 149 | 6% | 115 | 4% | 5 | 0% | 2,605 | 100% |
| Visual & Performing Arts | 694 | 56% | 165 | 13% | 184 | 15% | 53 | 4% | 71 | 6% | 54 | 4% | 10 | 1% | 1,231 | 100% |
| Other | 607 | 62% | 129 | 13% | 101 | 10% | 33 | 3% | 54 | 6% | 56 | 6% | 1 | 0% | 981 | 100% |
| Totals | 13,584 | 62% | 2,902 | 13% | 2,508 | 12% | 814 | 4% | 1,059 | 5% | 863 | 4% | 63 | 0% | 21,793 | 100% |

Table 5
Institutional Responses to Projected Faculty Shortages
Survey Results: Spring 1987
(N=24 Universities)

| | Instituted Primarily in Response to Projected Faculty Shortages | | Instituted for Any Other Reason | |
|---|---|---|---|---|
| | Yes | No | Yes | No |
| 1. Monitoring Activities | | | | |
| A. Computerized faculty flow model | 4 | 20 | 5 | 19 |
| B. Non-modeling analytical efforts | 8 | 16 | 16 | 8 |
| 2. Faculty Development Programs | | | | |
| A. Increased sabbatical opportunities | 1 | 23 | 8 | 16 |
| B. Redesigned instructional evaluation | 1 | 23 | 9 | 15 |
| C. Faculty renewal grants | 1 | 23 | 8 | 16 |
| D. Career development workshops | 3 | 21 | 9 | 15 |
| E. Professional growth contracts | 1 | 23 | 2 | 22 |
| 3. Changes in Personnel Policies | | | | |
| A. Phased retirement [1] | 3 | 21 | 12 | 12 |
| B. Partial retirement [2] | 3 | 21 | 4 | 20 |
| C. Bridge retirement [3] | 1 | 23 | 6 | 18 |
| D. Early retirement | 4 | 20 | 18 | 6 |
| E. Retirement counseling program | 3 | 21 | 12 | 12 |
| 4. Resource Initiatives (New or Changed) | | | | |
| A. Workload mix for senior faculty | 2 | 22 | 5 | 19 |
| B. Special graduate student funding [4] | 7 | 17 | 19 | 5 |
| C. Advance hiring [5] | 4 | 20 | 10 | 14 |
| D. Higher graduate stipends & fellowships | 3 | 21 | 4 | 20 |
| D. Multi-institution graduate recruiting [6] | 1 | 23 | 2 | 22 |

[1] **Phased retirement**: reduced workload, full retirement contribution.
[2] **Partial retirement**: reduced workload, draw on retirement.
[3] **Bridge retirement**: retire at 65 with contributions paid by institution until age 70.
[4] **Special graduate student funding**: new funding for graduate student support of women, blacks, or other special groups.
[5] **Advance hiring**: hiring on the basis of retirements projected two or more years later.
[6] **Multi-institution graduate recruiting**: promote interinstitutional cooperation for recruiting graduate students to disciplines projecting a declining faculty pool.

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